

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No. **10/524,366** Confirmation No.: 9856
Applicant(s): **MEYER, Jürgen et al.**
Filed: **February 11, 2005**
TC/A.U. **1755**
Examiner: **Patricia L. Hailey**
Title: **Silicas**

Docket No.: **032301.411**
Customer No.: **25461**

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450
Sir:

SECOND DECLARATION UNDER 37 C.F.R. 1.132

I, Jürgen Meyer, being duly advised of the nature and purpose of this declaration hereby declares and states as follows:

My C.V. is attached hereto and summarizes my educational background and relevant employment history. (will follow)

I have been advised that the examiner in the United States Patent and Trademark Office has said that my earlier Declaration is insufficient to overcome the rejection based on the *Deller, et al.* and *Ettlinger, et al.* patents.

I am a co-inventor named in the *Ettlinger, et al.* patent (U.S. 5,665,156) and also in the *Deller, et al.* patent (U.S. 5,776,240) as shown on the first page of each patent. Therefore, I am completely familiar with and knowledgeable as to the contents of each of these patents which have been relied on by the examiner in the United States Patent and Trademark Office to reject the above-identified patent application.

Because of my work with my co-inventors named in each of the *Ettlinger, et al.* and *Deller, et al.* patents, I am intimately knowledgeable and familiar with the subject matter of

silanised, structurally modified, pyrogenically produced silicas having alkylsilyl groups attached to the surface of such silicas.

I can state without any limitation that the *Deller, et al.*, and *Ettlinger, et al.*, patents do not disclose or describe a structurally modified silica.

I can further state that the inventors in the *Deller, et al.* patent were concerned with producing granulates of pyrogenically produced silica made by dispersing the pyrogenically prepared silica in water and spray drying it. The result of this procedure is to work in the opposite direction than one would work if trying to obtain a structurally modified silica.

The inventors in the *Deller, et al.* patent, including myself, intended to make larger silica particles which have a higher bulk density and which can be used without producing dust in handling. There is no description in *Deller, et al.*, of any procedure that results in structural modification of the silica.

In contrast, the silicas in accordance with the invention described in the above-identified application have been made smaller or miniaturized by destroying the aggregates of the primary silica particles in the structural modification process. The structurally modified silica of this invention is made by ball milling the silica so that it has a DBP value of at least 10% lower than the DBP value of non-structurally modified silica. Furthermore, the structurally modified silicas of this invention have been treated with one of two specific silane compounds as described in claim 1 of the above-identified application to produce a silanised silica.

The products of *Deller, et al.*, are not the same as those of the present invention because they have not been subjected to ball milling to become structurally modified.

The silicas described in the *Ettlinger, et al.*, patent are pyrogenically produced silicas which have been surface modified by treatment with silane compounds but they have not been structurally modified, especially not structurally modified by using a ball mill.

The silicas of the present invention and those described in our earlier patent of *Ettlinger, et al.*, exhibit distinctly different properties. Thus, the silicas of the *Ettlinger, et al.*, patent are very suitable for use as thickening agents in liquids such as in water soluble paints. The thickening effect is based on the characteristic feature of the pyrogenically produced silica that it agglomerates to larger clusters.

In contrast, the silica of the present invention is known for its good scratch resistance to lacquer coatings and essentially no thickening effect. The *Ettlinger, et al.*, silicas have good thickening effect but a lower value for scratch resistance as can be seen from Table 7 on page 17 of the present application which compares the silicas of the present invention with the *Ettlinger* silicas which are shown as comparative silicas 1 and 2.

In summary, the silicas of *Deller, et al.*, and *Ettlinger, et al.*, patents are not structurally modified silicas. Furthermore, the processes described by *Deller, et al.*, and *Ettlinger, et al.*, do not produce a structurally modified silica.

I have also read and am familiar with the patent of *Nargiello*, U.S. 6,193,795, and the technology described in that patent which was invented by Maria Nargiello, employed by the U.S. subsidiary of my current employer.

In my opinion, as a person having expert knowledge in this technology, the information in the *Nargiello* patent would not lead me as a person skilled in the art to change or modify the

procedures for preparing the silicas shown in the *Deller, et al.*, or *Ettlinger, et al.*, patents because I now that the result would likely be a reduction in the thickening effect.

I, Jürgen Meyer, hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this declaration is directed.

Date: July 20th, 2007

Jürgen Meyer